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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,296	10/03/2000	Toru Koizumi	35.C14851	5740

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

09/678,296

Applicant(s)

KOIZUMI, TORU

Examiner

Yogesh K Aggarwal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guidash (US Patent # 6,657,665) in view of Merrill (US Patent # 5,892,541).

[Claim 31]

Guidash teaches a method of driving a solid image pickup device comprising a photoelectric conversion unit (figure 1, element PD), a charge-voltage conversion unit (figure 1, element FD) for converting electric charges from the photoelectric conversion unit into voltage signals, a signal amplification means (figure 1, element SIG) for amplifying the voltage signals generated in the charge-voltage conversion unit, and a charge transfer means (figure 1, element TG) for transferring photoelectric charges from the photoelectric conversion unit to the charge-voltage conversion unit (figure 1, element FD). Guidash fails to teach performing a primary readout operation of transferring a part of the photoelectric charges accumulated in the photoelectric conversion unit in a readout period the photoelectric conversion unit to the charge-voltage conversion unit and performing at least one other readout operation of transferring the rest of the photoelectric charges from the photoelectric conversion unit to the charge-voltage conversion unit. However Merrill teaches performing a primary readout operation (figure 4E: VsubRS1 at time t3, col. 5 lines 39-45, disclose that the integration cycle starts with resetting the Cell 110 to an initial voltage and then at time t3 the primary or first readout of the charges take place as

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disclosed in col. 6 lines 3-13] of reading out a part of the photo-electric charges accumulated in the photoelectric conversion part (figure 2,5: Cell C1) (col. 7 lines 52-55)[The first readout for cell C1 takes place at time T3] and performing at least one other readout step (figure 4E: t8) of transferring the rest of the photo-electric charges from the photoelectric conversion part to the charge-voltage conversion part of Guidash. Therefore taking the combined teachings of Guidash and Merrill, it would have been obvious to one skilled in the art to have been motivated to have a primary readout operation of transferring a part of the photoelectric charges accumulated in the photoelectric conversion unit in a readout period the photoelectric conversion unit and performing at least one other readout operation of transferring the rest of the photoelectric charges from the photoelectric conversion unit as shown in Merrill by the charge transfer means to the charge-voltage conversion unit of Guidash. The benefit of doing so would be to increase substantially the dynamic range of an APS as taught in Merrill (See Abstract).

[Claim 32]

Merrill teaches wherein the output signals obtained by the division and the readout are individually retained (col. 8 lines 51-54) and a horizontal scan is carried out after adding the output signals or while adding the output signals (col. 9 lines 30-36).

[Claim 33]

Merrill teaches wherein after the primary readout operation (col. 7 lines 52-55, figure 4E: VsubRS1 at time t3) and before the final readout operation (col. 8 lines 13-17, figure 4E: t8), at least one intermediate readout operation is performed by resetting the charge-voltage conversion part (col. 7 lines 59-67, figures 4A, 4B: t6 and t7), transferring a part of the photo-electric charges from the photoelectric conversion part to the charge-voltage conversion part, and reading

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out output signals amplified by the amplification means (figure 2: DC1-DCm) to the signal output line (figure 2: DO1-D0m).

[Claim 34]

Claim 34 is an apparatus claim corresponding to method claim 32. Therefore it has been analyzed and rejected based on method claim 32.

[Claim 35]

Merrill teaches photoelectric conversion part is an embedded-type photodiode (See figure 8: 230 and 210 form an embedded type photodiode)

[Claims 36 and 37]

Guidash in view of Merrill teach the solid-state image pickup device of claim 34 and a signal processing circuit for processing output signals from the solid image pickup device (figure 2, element 112 in Merrill). Merrill also teaches that the APS to be used in a digital still camera having a shutter defining the integration time which inherently has an optical system for focusing a ray of light to the solid-state image pickup device and a mechanical shutter (col. 6 lines 63-67).

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K Aggarwal whose telephone number is (703) 305-0346. The examiner can normally be reached on M-F 9:00AM-5:30PM.

4. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA
December 2, 2004


TUAN HO
PRIMARY EXAMINER